



**COUNTY OF SAN DIEGO**  
 DEPARTMENT OF PUBLIC WORKS  
 PRIVATE DEVELOPMENT CONST.  
 INSPECTION  
 5510 OVERLAND AVE, SUITE 210  
 SAN DIEGO, CALIFORNIA 92123-1239  
 (858) 694-3165 FAX: (858) 694-2354



**EXCAVATION PERMIT**

DATE ISSUED: 03/22/2017  
 EXPIRATION DATE: 09/22/2017

TRUST ACCOUNT NO.:

PERMIT NO.: DPW2017-RWEXCP-71191  
 Financial Source: ACCT REC'V

APPLICANT:  
 NV5 / SAN DIEGO GAS & ELECTRIC  
 ALBERT DECHICO  
 15092 AVENUE OF SCIENCE, SUITE  
 200  
 SAN DIEGO, CA 92128  
 760-644-8014  
 ADechico@SEUcontractor.com

CONTRACTOR:

PERMIT OWNER:  
 SAN DIEGO GAS & ELECTRIC  
 NEAL BARTEK  
 8335 CENTURY PARK CT  
 SAN DIEGO, CA 92123  
 858-472-1790

**SITE ADDRESS / JOB LOCATION:**

POMERADO RD / SAN DIEGO - TB 1209-F6, G6

**NEAREST X-STREET / INTERSECTION: POMERADO RD & I-15, POMERADO & WILLOW CREEK RD**

APN:

Agency Job No.: TL23071

GPS COORD.:

**DETAILED DESCRIPTION:**

Warning! Within 1000 Feet of School Property  
 Scope of Work: TRENCHING FOR PROPOSED TL23071 ELECTRICAL TRANSMISSION LINE (8" AND 2" DUCT BANK)  
 Related Permits: DPW2017-RWTCP-00229.

**Notes:**

- A) A Pre-construction conference is required prior to the start of any work in the County ROW. Contact your assigned Private Development Construction Inspection (PDCI) Inspector directly to schedule.
- B) Stormwater Best Management Practices (BMPs) are required at all times and shall be planned and installed in accordance with the County's Watershed Protection Ordinance, Municipal Separate Storm Sewer System Permit (MS4), and, if applicable, the State Construction General Permit regulations .
- C) Traffic Control Permit(s) are required and must be obtained prior to start of any work in the County's Road ROW.
- D) Compaction of backfill material shall be achieved by "Mechanical Compaction" methods and geotechnical compaction reports are required for all compacted sections. Exceptions to compaction testing requirements may be allowed at the discretion of DPW.
- E) Existing culverts and other road facilities shall be protected in place against any damage. Any culvert or road facility damaged during construction shall be reported to DPW immediately through your assigned Inspector.
- F) All existing paved and unpaved areas damaged, disturbed, or removed by the permitted work shall be repaired to the County Standards and as approved by DPW PDCI inspector. The trench resurfacing shall be done in accordance with San Diego Regional Standard Drawings G-24 A&B, Type D for asphalt surfacing, G-25 for concrete surfacing. In addition, the final surface treatment shall match the existing surface type.
- G) Deviations from the standard trench restoration requirements must be reviewed and approved by DPW prior to start of work.
- H) Trenches and excavation that exceeds five (5) feet in vertical depth shall be done in accordance with CAL-OSHA Safety Standards. Contact CAL-OSHA at (619) 767-2280 for permit requirements.
- I) Gate Well Cap and Can installations shall meet San Diego Regional Standard Drawing WV-02.
- J) Bollards are not allowed in the Right-of-Way to protect equipment per Highway Design Standards Section 2.2 No. 14. No less than an 8ft minimum clear recovery zone (CRZ) shall be maintained for roadways without curbs.
- K) Subject to Streets and Highways Code Sections 732.5, 1492.5 and 1810.5; Survey monuments shall be preserved, referenced, and/or replaced pursuant to Section 8771 of the Business and Professions Code.
- L) No greater than 50 Linear Feet of trench shall be opened and plated at any one time. Exceptions to the plated length may be allowed at the discretion of DPW.
- M) Hours of work may be determined by the Traffic Control Permit. No traffic controls will be allowed during students drop off and pickup periods in the vicinity of schools and peak commute hours at some locations.

N) To document pavement condition in Condition No. 2FL above, all permits that utilize heavy equipment and/or trucks weighing over 7-tons loaded weight, the applicant shall submit acceptable photo-documentation of the existing road surfacing including any visible cracks in the pavement for all work locations and intended haul routes to assigned PDCI inspector prior to start of construction.

LENGTH(FEET): 3100

WIDTH(FEET): 4

DEPTH(FEET): 4

PIPE SIZE: 8

MATERIAL: PVC DUCT BANK

SPECIFIC CONDITIONS:

Permittee agrees to indemnify, hold harmless and defend the County and each of its officers and employees from any liability or responsibility for accident, loss or damage to persons or property arising by reason of the work done by permittee, or permittees' agents, employees or representatives.

Before you dig, call UNDERGROUND SERVICE ALERT at 1-800-422-4133. Enter UNDERGROUND SERVICE ALERT Inquiry Identification No. here \_\_\_\_\_. This permit is not valid until an inquiry number is obtained.

Notify construction inspection at (858) 694-3165, 24 hours in advance of beginning any portion of the work, completion of work, backfill or concrete pour, and otherwise as required by the Director of Public Works.

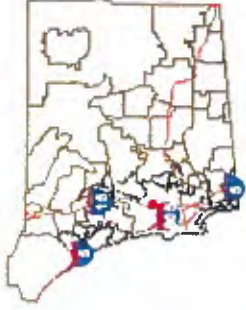
Issuance of this permit does not authorize any work to be performed until the permission of the property has been obtained.

This permit is granted under provision of Title 7, of the San Diego County Code of Regulatory Ordinances. It is understood and agreed upon that if this location is under construction, the consent of the contractor must be obtained. This installation is granted with the strict understanding that same is subject to relocation, change of grade, or removal at the request of the Director, Department of Public Works. Permittee shall be entirely responsible for any liability due to any accident, loss or damage resulting from the design or performance of work involved. Issuance of this permit does not authorize any work to be performed until the permission of the property owner has been obtained.

County of San Diego, Director of Public Works by: \_\_\_\_\_

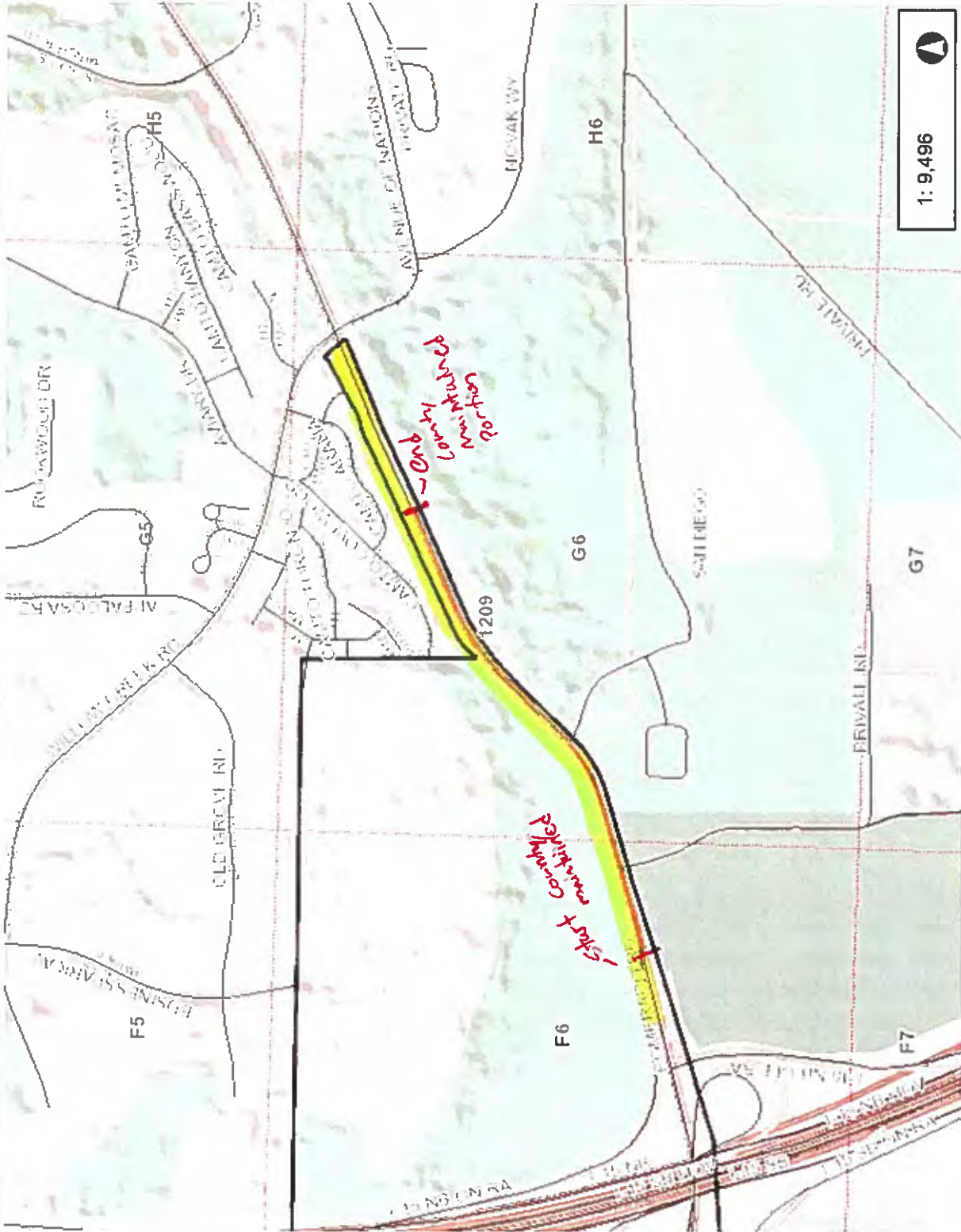
Date: 03/22/2017

This permit and all attachments must be kept on the work site, to be shown to any authorized agent of the County upon request.



**Legend**

- County Maintained Roads
- Streets
- Municipal Boundary
- Page
- Grid



1:9,496

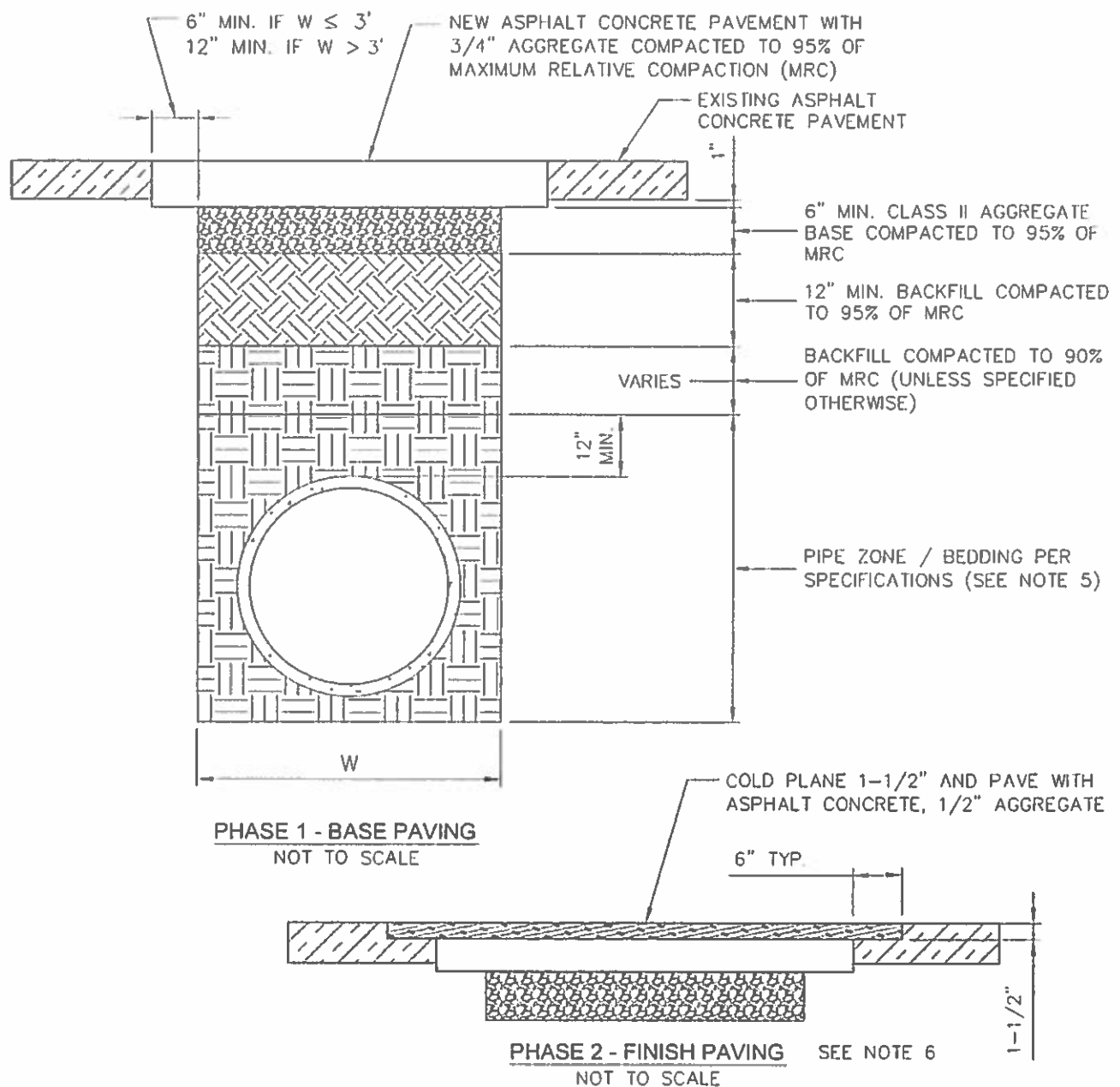


0.3 Miles



This map is a user generated static output from an internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable.  
**THIS MAP IS NOT TO BE USED FOR NAVIGATION**

**Notes**



**NOTES:**

1. PAVEMENT MATERIAL AND SURFACING SHALL MATCH EXISTING.
2. ALL REMOVED SURFACE IMPROVEMENTS (CURBS, DIKES, SIDEWALKS, ETC.) SHALL BE REPLACED IN KIND.
3. ALL AREAS OF EXISTING AC LESS THAN 48" WIDE REMAINING AFTER TRENCHING SHALL BE COLD PLANED AND PAVED PER PHASE II FINISH PAVING.
4. PHASE I PAVEMENT THICKNESS SHALL EQUAL EXISTING PAVEMENT THICKNESS PLUS 1" (4" MINIMUM / 7" MAXIMUM).
5. WHEN GRAVEL OR ROCK IS USED WITHIN THE PIPE ZONE, THAT MATERIAL SHALL BE ENCAPSULATED IN A FILTER FABRIC ENVELOPE WITH W/2 > 12" MINIMUM OVERLAP. THIS REQUIREMENT APPLIES ONLY TO TRENCHES UNDER OR WITHIN 10' OF SURFACING.
6. PHASE II PAVING SHALL BE COMPLETED NOT EARLIER THAN 14 CALENDAR DAYS AND NOT LATER THAN 75 CALENDAR DAYS AFTER PHASE I PAVING.
7. FOR PCC PAVEMENT REFER TO RSD G25

|   |                        |                                    |                             |          |         |
|---|------------------------|------------------------------------|-----------------------------|----------|---------|
| DRAWN BY: <u>EDM</u>  | CHECKED BY: <u>JSM</u> | SAN DIEGO COUNTY DESIGN STANDARD   | REVISIONS                   | APPROVED | DATE    |
| RECOMMENDED BY: <u>JEFF S. MOODY, P.E.</u>                    |                        |                                    | REV                         | JSM      | 10/2012 |
| APPROVED BY COUNTY ENGINEER                                   |                        | <b>TRENCH SURFACING<br/>TYPE R</b> |                             |          |         |
| <i>W. Fakhreddine</i>   | DATE: <u>10/15/12</u>  |                                    |                             |          |         |
| MOHAMAD FAKHREDDINE, P.E.<br>R.C.E. NO. 44520, EXP. 3/31/2014 |                        |                                    | DRAWING NUMBER <b>DS-22</b> |          |         |



# County of San Diego

DEPARTMENT OF PUBLIC WORKS  
TRAFFIC ENGINEERING SECTION

APPLICATION FOR TRAFFIC CONTROL PERMIT -- ATTACHED PLAN AND TCP-4, TCP-9, & TCP-54

(type of traffic control: flag, shift, etc.)

DPW2017-RWTCP-00229

County of San Diego  
DPW / Traffic Engineering (MS 0338)  
5510 Overland Ave, Suite 410  
San Diego, CA 92123-1239

telephone/voice mail: (858) 694-3863  
secretary: (858) 694-3850  
fax: (858) 694-3928  
e-mail: yosmia.johnson@sdcounty.ca.gov

ENCROACHMENT/EXCAVATION/CONSTRUCTION PERMIT # DPW2017-RWEXCP-71191

### Applicant Information

Company: NV5 / SAN DIEGO GAS & ELECTRIC  
Agent/Applicant: ALBERT DECHICO  
Agent Phone Number: 760-644-8014 Agent Fax Number: \_\_\_\_\_  
Agent Mailing Address: 15092 AVENUE OF SCIENCE, SUITE 200  
City: SAN DIEGO State: CA Zip Code: 92128  
Reason for Traffic Control: TO TRENCH FOR PROPOSED TL23071 ELECTRICAL TRANSMISSION LINE (8" AND 2" DUCT BANK)

Start Date: 03/22/2017 Start Time: 09:00 AM

Finish Date: 09/22/2017 End Time: 03:30 PM

It is requested that a permit be granted for traffic control on the following street/streets:

STREET 1 POMERADO RD From Street I-15 To SAN DIEGO CITY LIMITS

COMMUNITY SAN DIEGO, TB 1209-F6 & G6 Thomas Bros. Map Page and Grid # \_\_\_\_\_

## Signature on Application

(Agent's or Applicant's Signature)

03/21/2017

(Date)

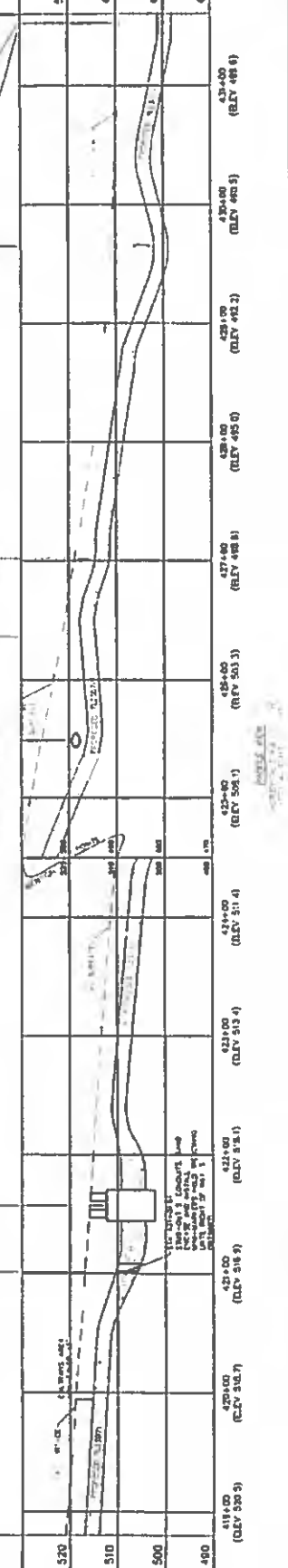
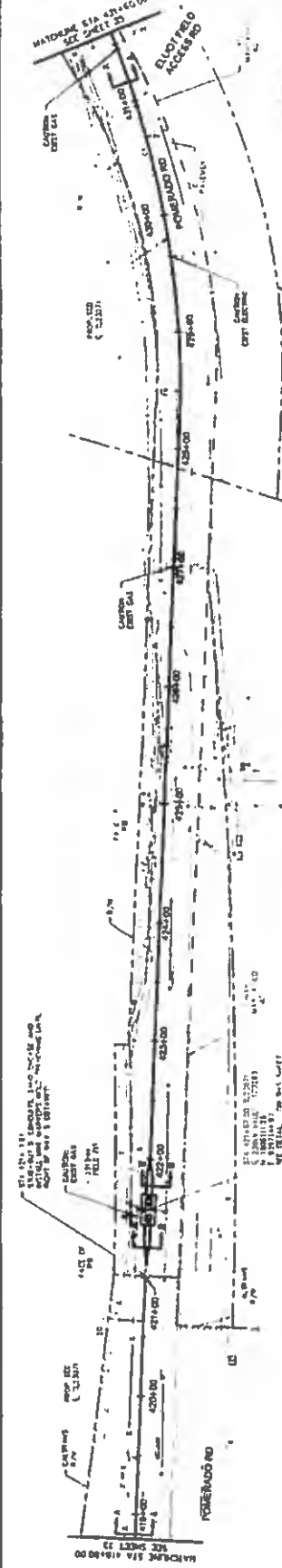
See Attached Plan (s) and Traffic Control Notes

This request is / ~~is not~~ approved.

Director, Department of Public Works

By   
(For Road Commissioner)

CC: Construction Inspection  
Ref: Sec 72.75. County Code of Regulatory Ordinances



**HVS**  
Hatchery Valley Substation

**SDGE**  
SAN DIEGO GAS & ELECTRIC  
TRANSMISSION ENGINEERING  
PLAN & PROFILE  
TL23071

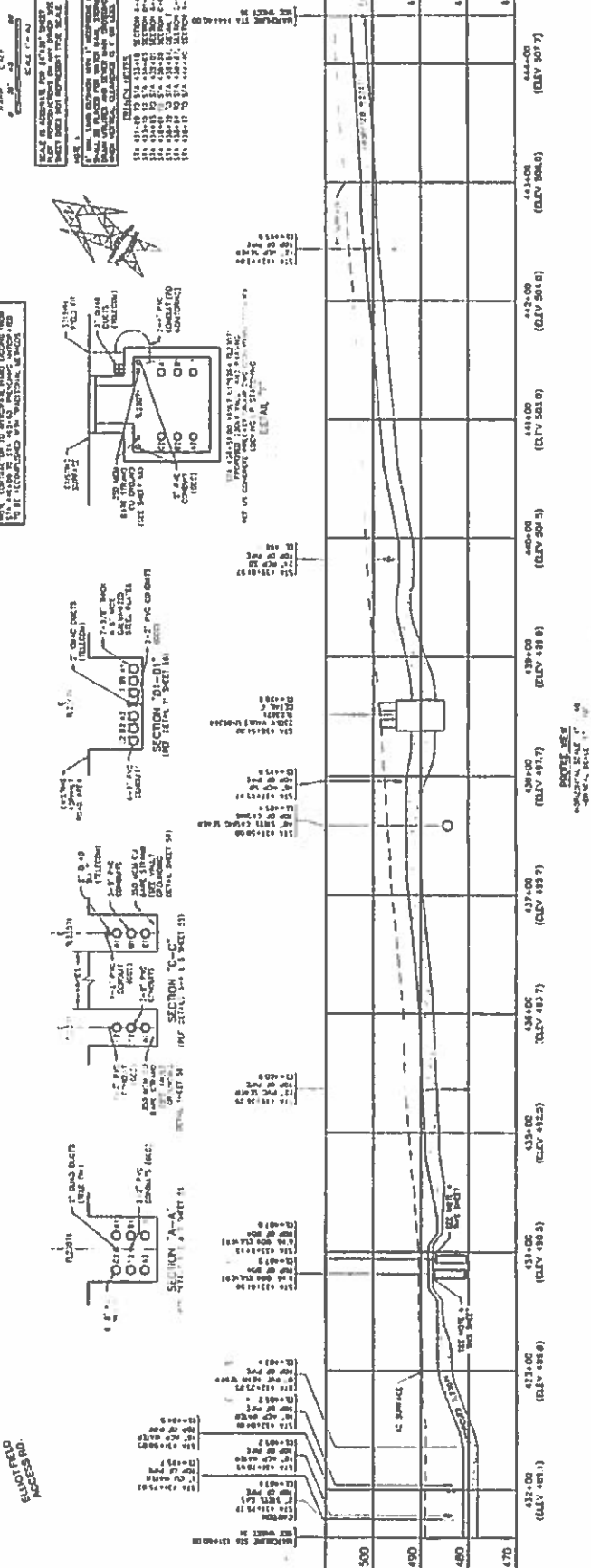
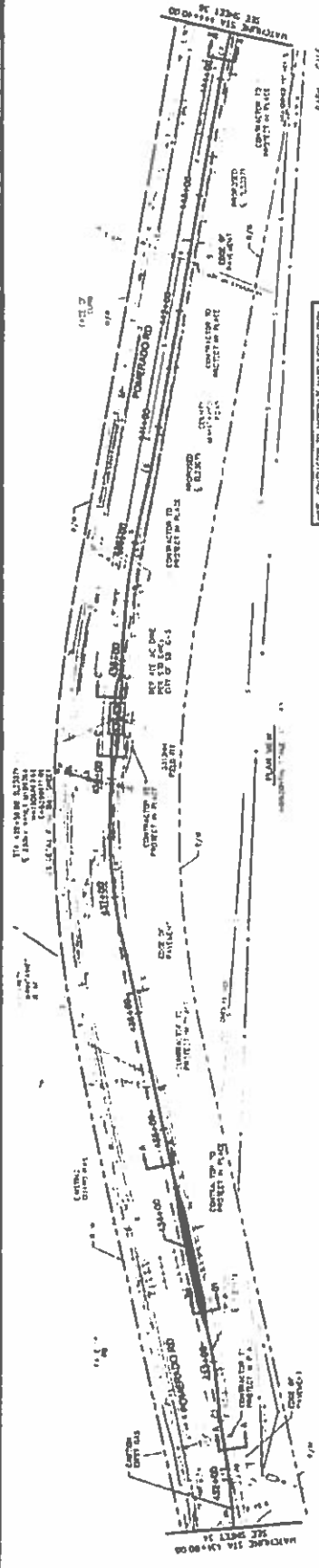
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**DGALBERTI**  
Civil & Surveying Dept  
Hatchery Valley Sub  
811

TL23071  
STCAMORE CANYON SUBSTATION  
TO PENASQUITOS SUBSTATION  
250KV UNDERGROUND SEGMENT  
DRAWING NUMBER  
63422-34

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| Station | Elevation (ft) | Curve Data   |
|---------|----------------|--------------|
| 410+00  | 410.00         | (ELEV 510.3) |
| 420+00  | 420.00         | (ELEV 510.7) |
| 430+00  | 430.00         | (ELEV 516.9) |
| 440+00  | 440.00         | (ELEV 516.1) |
| 450+00  | 450.00         | (ELEV 513.4) |
| 460+00  | 460.00         | (ELEV 511.4) |
| 470+00  | 470.00         | (ELEV 508.1) |
| 480+00  | 480.00         | (ELEV 503.3) |
| 490+00  | 490.00         | (ELEV 498.9) |
| 500+00  | 500.00         | (ELEV 495.0) |
| 510+00  | 510.00         | (ELEV 492.2) |
| 520+00  | 520.00         | (ELEV 488.6) |



**SAN DIEGO GAS & ELECTRIC**  
 TRANSMISSION ENGINEERING  
 PLAN & PROFILE  
 TL23071

**SDGE**

SYCAMORE CANYON SUBSTATION  
 TO PENASQUITOS SUBSTATION  
 230KV UNDERGROUND SEGMENT  
 DRAWING NUMBER  
 0.34-22-35

SCALE: 1/2" = 100' HORIZ. 1/8" = 10' VERT.

SHEET 35 OF 40

SCALE IS APPLICABLE FOR FIELD WORK ONLY. FIELD NOTES AND RECORDS SHALL BE KEPT ON FILE AND SHALL BE MADE AVAILABLE TO THE CONTRACTOR. CONTRACTOR SHALL BE RESPONSIBLE FOR THE SCALE.

NOTES: CONTRACTOR TO VERIFY ALL ELEVATIONS AND TO BE RECORDED ON THE ORIGINAL RECORD DRAWING.

SECTION 'A-A' (SEE SHEET 34) NO. 241-242 (SEE SHEET 34)

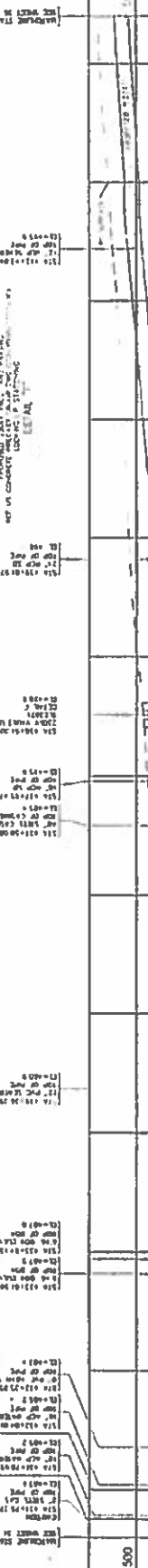
SECTION 'B-B' (SEE SHEET 34) NO. 243-244 (SEE SHEET 34)

SECTION 'C-C' (SEE SHEET 34) NO. 245-246 (SEE SHEET 34)

SECTION 'D-D' (SEE SHEET 34) NO. 247-248 (SEE SHEET 34)

SECTION 'E-E' (SEE SHEET 34) NO. 249-250 (SEE SHEET 34)

SECTION 'F-F' (SEE SHEET 34) NO. 251-252 (SEE SHEET 34)



VERTICAL SCALE: 1/8" = 10'

HORIZONTAL SCALE: 1/2" = 100'

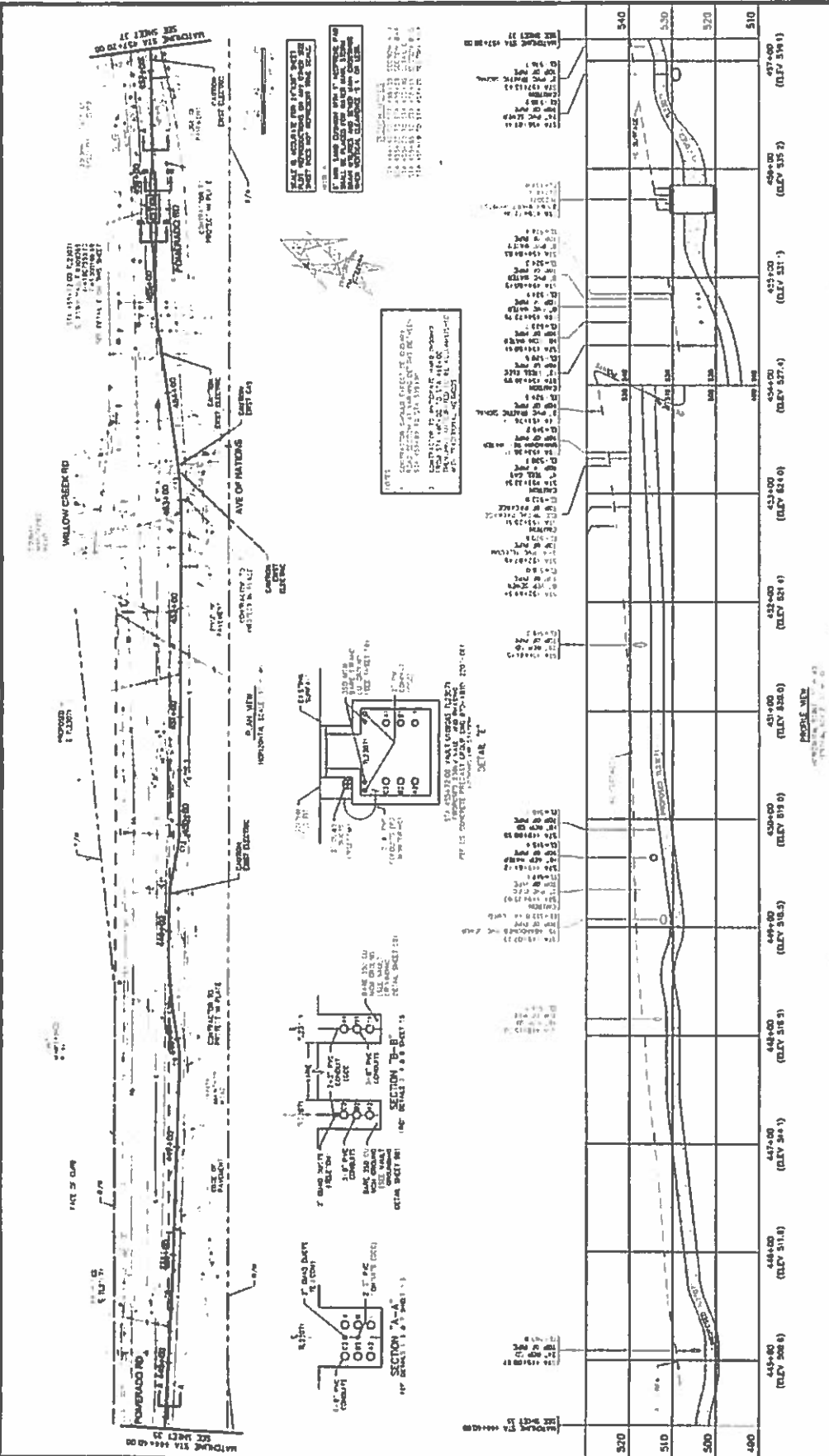
PROFILES ARE FOR INFORMATION PURPOSES ONLY. CONTRACTOR SHALL VERIFY ALL ELEVATIONS AND TO BE RECORDED ON THE ORIGINAL RECORD DRAWING.

DATE: 08/20/10

DRAWN BY: [Name]

CHECKED BY: [Name]

APPVED BY: [Name]



**HV5**  
SUNNY VALLEY - TRAIL

**DIGALBERT**  
Call or Writing Dept  
Based on the Job  
811

**SDGE**  
SAN DIEGO GAS & ELECTRIC  
TRANSMISSION ENGINEERING

**PLAN & PROFILE**  
TL23071

**SYCAMORE CANYON SUBSTATION  
TO PENASQUITOS SUBSTATION  
230KV UNDERGROUND SEGMENT**

SCALE: HORIZ. 1"=100' VERT. 1"=20'  
SHEET 36 OF 60

DATE: 11/11/03  
DRAWING NUMBER: 63422-36



POMERADO RD / DPW2017-RWTCP-00229  
FLAGGING AND BIKE LANE CLOSURE  
TO TRENCH FOR PROPOSED ELECTRICAL TRANSMISSION LINE  
TRAFFIC CONTROL NOTES

Contractor shall make application to the Traffic Engineering Section of the Department of Public Works (Roads Division, 5510 Overland Ave, Suite 410, Rm 470, San Diego, CA, 92123-1239, Mail Station O334) for a traffic control permit, a minimum of three (3) weeks prior to commencement of work. There is no fee for this permit.

The closure of Pomerado Rd will not be permitted at any time.

Work hours shall be from 9:00 AM to 3:30 PM, Monday thru Friday.

Traffic control shall be in accordance with attached plan and San Diego Regional Standard Drawings TCP-4, TCP-9 and TCP-54.

The Contractor shall be responsible for identifying the locations of schools that will be affected in the area of the impending work. Due to peak volumes of pedestrian and vehicular traffic associated with schools, the Contractor may be required to delay the start of construction operations until after school is in session and complete construction operations before school is out of session.

During non-working hours, the Contractor shall provide the full road width, which existed prior to the start of construction.

When the work zone is confined to the road shoulder with minimal or no road encroachment, refer to Chapter 6H "Typical Applications" of the "California Manual on Uniform Traffic Control Devices" (CA MUTCD), latest edition.

#### NOTIFICATION

Permittee agrees to indemnify, hold harmless and defend the County and each of its officers and employees from any liability or responsibility for accident, loss or damaged to persons or property arising by reason of the work done by permittee, or permittee's agents, employees or representatives.

Whenever construction activity will disrupt or impede access to any residence/business, the contractor shall inform each affected residence/business by written notice the nature and expected duration of the disruptive construction activity. Such written notice shall be delivered to each affected residence/business a minimum of two (2) weeks prior to the start of the disruptive construction activity.

The Contractor shall notify all adjacent residence/business, which will be affected in the area of the impending work, five (5) days in advance, by using doorknob-type notices. The Contractor shall include its business telephone number on the notices. The Contractor's business telephone number shall be toll free or local to San Diego County. Doorknob type notices will be furnished by the Contractor.

## SIGNING

All signs shall conform to the specification set forth in the latest edition of Part 6, "Temporary Traffic Control" of the "California Manual on Uniform Traffic Control Devices for Streets and Highways" (CA MUTCD), latest edition.

The Contractor shall place "Tow-Away/No Parking" signs along the street 24 hours prior to the impending work. "Tow-Away/No Parking" signs shall be furnished by the Contractor and shall contain a space in which the contractor shall enter the day(s) during which parking will be prohibited. Remove these signs immediately when they are no longer needed for use in the respective area of the project. If work is delayed or rescheduled for any reason after placement of "Tow-Away/No Parking" signs, remove the signs and place redated signs two (2) days in advance of the impending work.

All signs shall be in place prior to start of construction.

All advance warning signs shall be 48" x 48".

All other signs shall be standard size unless otherwise noted.

For continuous work lasting more than two weeks, all W20-1 or C23, and curve warning signs shall be mounted on 4"x 4" wooden posts at standard height and equipped with type "B" high-intensity flashers, unless otherwise noted.

For work of less than two weeks, all W20-1 signs can be either post-mounted on 4" x 4" wooden posts at standard height or on a portable type installation.

Post-mounted signs shall remain in place at all times until construction is completed. Other signs required for traffic control shall be laid down or covered during non-working hours.

All other signs may be mounted on a portable type installation as per Section 12-3.06B of Caltrans Standard Specifications unless otherwise noted.

All bike lane signs within work area shall be covered during working hours. Contractor shall use "BIKE LANE CLOSED" signs when working on roads that have designated bike lanes and remove the "BIKE LANE CLOSED" signs within the work area during non-working hours.

All advance-warning signs for night closures shall be illuminated.

Placement of all signs shall not interfere with sight distance at driveways and intersections.

Position of post-mounted signs may be adjusted as necessary to optimize visibility or sign and/or obtain suitable placement area.

W20-1 signs and all other yellow or orange signs shall have a reflective background constructed of at least high-intensity (Type III) retroreflective sheeting.

## STRIPING

All obliterated striping, raised pavement markers, pavement paint legends and markings, shall be replaced by the Contractor.

All new striping shall be reflectorized and shall be supplemented with new raised pavement markers of the proper pattern corresponding to the striping.

All striping changes shall be the responsibility of the Contractor. All new striping shall be supplemented with new pavement markers of the proper pattern corresponding to the striping. Striping modifications (due to construction), which exceed one (1) week in duration, require sandblasting or grinding. All sandblasting or grinding required by said striping changes shall be completed within 24 hours of that change.

## TRAFFIC SIGNAL LOOP DETECTORS

Signal equipment, such as loop detectors, damaged by the Contractor shall be replaced by the Contractor.

## DEVICES

Actual work area shall be protected with either orange reflectorized post delineators or by barricades equipped with type "A" flashers sufficient in number to prevent entry of both vehicles and pedestrians except as may be noted elsewhere. At no time shall a continuous row of flashers be used adjacent to a lane of traffic. Only steady-burn type "C" lamps shall be used under these circumstances.

All barricades except those supporting C27 signs shall be equipped with type "A" flashers unless otherwise noted.

All type "B" flashers shall operate 24 hours a day.

## FLAGGING

Flagging operation shall use alternate one-way movement to pass traffic through the construction area.

Traffic shall be controlled at all times by flaggers. Flaggers shall be in constant communication with each other during the flagging operation. Advance flaggers shall be positioned upstream to warn traffic when queues develop. Additional flaggers may be required at intersections.

Where the one-lane section is short enough so that each end is visible from the other end, traffic will be controlled by means of a flagger at each end of the section. They should be able to communicate with each other verbally or by means of signals. These signals should not be such as to be mistaken for flagging signals. Where the end of one-way section is not visible from the other end, the flaggers shall maintain contact by means of radio or field telephones so that a flagger may know when to allow traffic to proceed into the section.

Flaggers shall be positioned near crest of hill allowing flaggers sufficient visibility of approaching traffic.

Flaggers shall be positioned so that they are easily visible to approaching traffic.

Flagger stations for work at night shall be illuminated as referenced in Part 6 of the "California Manual on Uniform Traffic Control Devices for Streets and Highways" (CA MUTCD), latest edition.

### ACCESS

Emergency vehicle access shall be maintained at all times.

Contractor shall maintain access to all private driveways within the construction area. If continuous access cannot be maintained, access must be provided as needed.

Adequate provisions shall be made for pedestrian traffic.

Adequate sight distance shall be maintained at all intersections in the vicinity of the work zone. If sight distance is affected by the traffic control, the contractor shall provide adequate distance per the County of San Diego Public Road Standards. The use of mirrors, or such devices, is not acceptable as an alternative to providing adequate sight distance.

### GENERAL

Contractor shall be responsible for supplying and maintaining all traffic control devices for both the construction area and the detour.

The Contractor shall be responsible for supplying, installing and maintaining all traffic control devices as shown on the plan along with additional traffic control devices that may be required to ensure safe movement of traffic and pedestrians through work area.

The provisions of this section may be modified or altered if, in the opinion of the engineer, public traffic will be better served and the work expedited. Said modifications or alterations shall not be adopted until approved in writing by the engineer.

Any open trenches within the construction area shall be adequately protected with barricades and spoil piles to prevent entry of vehicles and pedestrians.

Open trenches shall be protected by either K-rail or spoil piles.

All trenches shall be back-filled and paved or plate-bridged overnight. All temporary steel plate bridging shall have non-skid surfaces. Non-skid surfaces on the temporary steel plate bridging as well as the method of installing the temporary steel plate bridging and shoring shall be as specified in Section 602.1, "Temporary Steel Plate Bridging -- With a Non-Skid Surface" of the most current Caltrans Encroachment Manual. Unless approved by the County Inspector, use of steel plate bridging shall not exceed 24 hrs. At the end of every work day, steel plate bridging shall not exceed 50 feet in length, unless approved by the County Inspector. Steel plates shall have AC ramps on all edges. Open trenches are not allowed during non-working hours.

All dirt and debris shall be removed from the roadway each day before completion of work. Street must be maintained in drivable condition at all times.

All advance warning signs, delineators, and barricades shall be removed from the roadway at the end of work each day (except W20-1 signs, if plate-bridging overnight.)

The Contractor is to replace roadway and all signing to normal conditions at the completion of work.

The Contractor shall coordinate traffic operations with adjacent Municipalities, San Diego Metropolitan Transit System (MTS), private road owners and/or Home Owner Associations (HOA).

**SIGN LEGEND**

**LEGEND**

- APPROXIMATE POTHOLE LOCATION
- ⚠ SIGN
- TRAFFIC CONES / DELINEATOR
- ⚓ BARRICADE
- ⚑ FLAGGER
- ⚡ FLASHING ARROW SIGN
- 🚧 WORK ZONE
- 🚚 CONSTRUCTION VEHICLE
- 🚌 BUS STOP

| APPROACH SPEED (MPH) | MINIMUM TAPER LENGTHS (L) (FEET) FOR 12-FOOT LANE |     | MINIMUM BUFFER LENGTH (FEET) | MAX CONE SPACING |         | CONFLICT |
|----------------------|---|-----|------------------------------|------------------|---------|----------|
|                      | L   | T/L |                              | TAPER            | TANGENT |          |
| 25                   | 125   | 65  | 155                          | 25               | 50      | 12       |
| 30                   | 180   | 90  | 200                          | 30               | 60      | 15       |
| 35                   | 245   | 125 | 250                          | 35               | 70      | 17       |
| 40                   | 320   | 160 | 305                          | 40               | 80      | 20       |
| 45                   | 500   | 270 | 360                          | 45               | 90      | 22       |
| 50                   | 600   | 300 | 425                          | 50               | 100     | 25       |
| 55+                  | 690   | 330 | 495                          | 55               | 110     | 27       |

**SURVEYORS, INC**  
  
**Gail McMoran**  
 President  
 2534 EAST EL NORTE PARKWAY SUITE C  
 ESCOBEDO, CA 92027  
 PHONE (760) 480-2347  
 CELL (760) 419-3738

**PROJECT NAME:** TL23071 - Sycamore Canyon Substation To Penasquitos Substation - 230 KV Underground  
**AIRX JOB#:** X160218  
**THOMAS GRID#:** -  
**TYPE OF WORK:** TRENCHING / CONDUIT  
**DRAWN FOR:** SAN DIEGO COUNTY  
**MISC/POTHOLE#:**

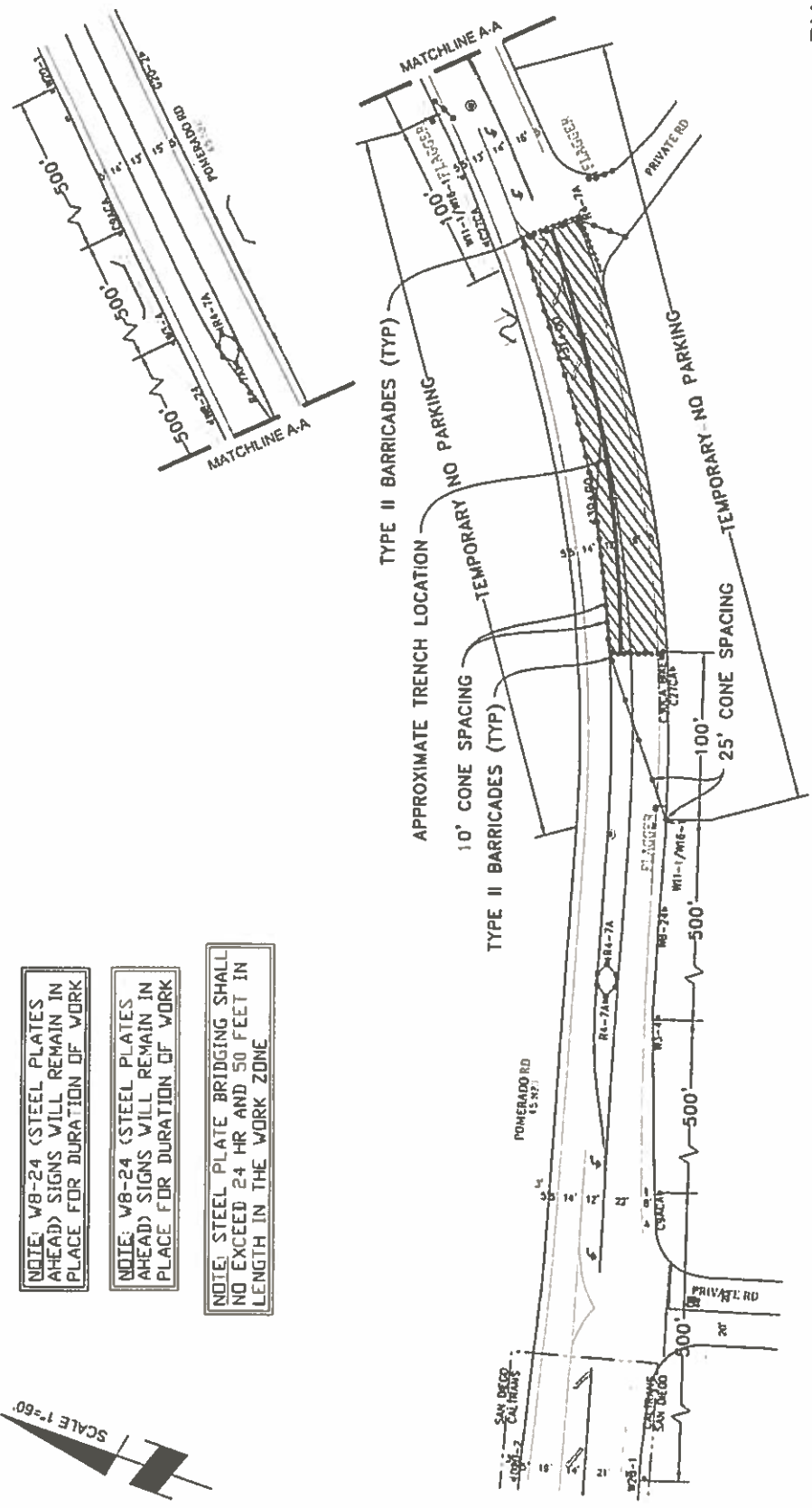
**DATE:** Mar 2, 2017  
**DESIGNED BY:**  
 Clint Jones  
**SHEET 1 OF 4**



**NOTE: W8-24 (STEEL PLATES AHEAD) SIGNS WILL REMAIN IN PLACE FOR DURATION OF WORK**

**NOTE: W8-24 (STEEL PLATES AHEAD) SIGNS WILL REMAIN IN PLACE FOR DURATION OF WORK**

**NOTE: STEEL PLATE BRIDGING SHALL NOT EXCEED 24 HR AND 50 FEET IN LENGTH IN THE WORK ZONE**



PHASE 01

DATE: Mar 2, 2017  
 DESIGNED BY:  
 Clint Jones

PROJECT NAME: TL23071 - Sycamore Canyon Substation To Penasquitos Substation - 230 KV Underground

AIRX JOB#: X160218

THOMAS GRID# -

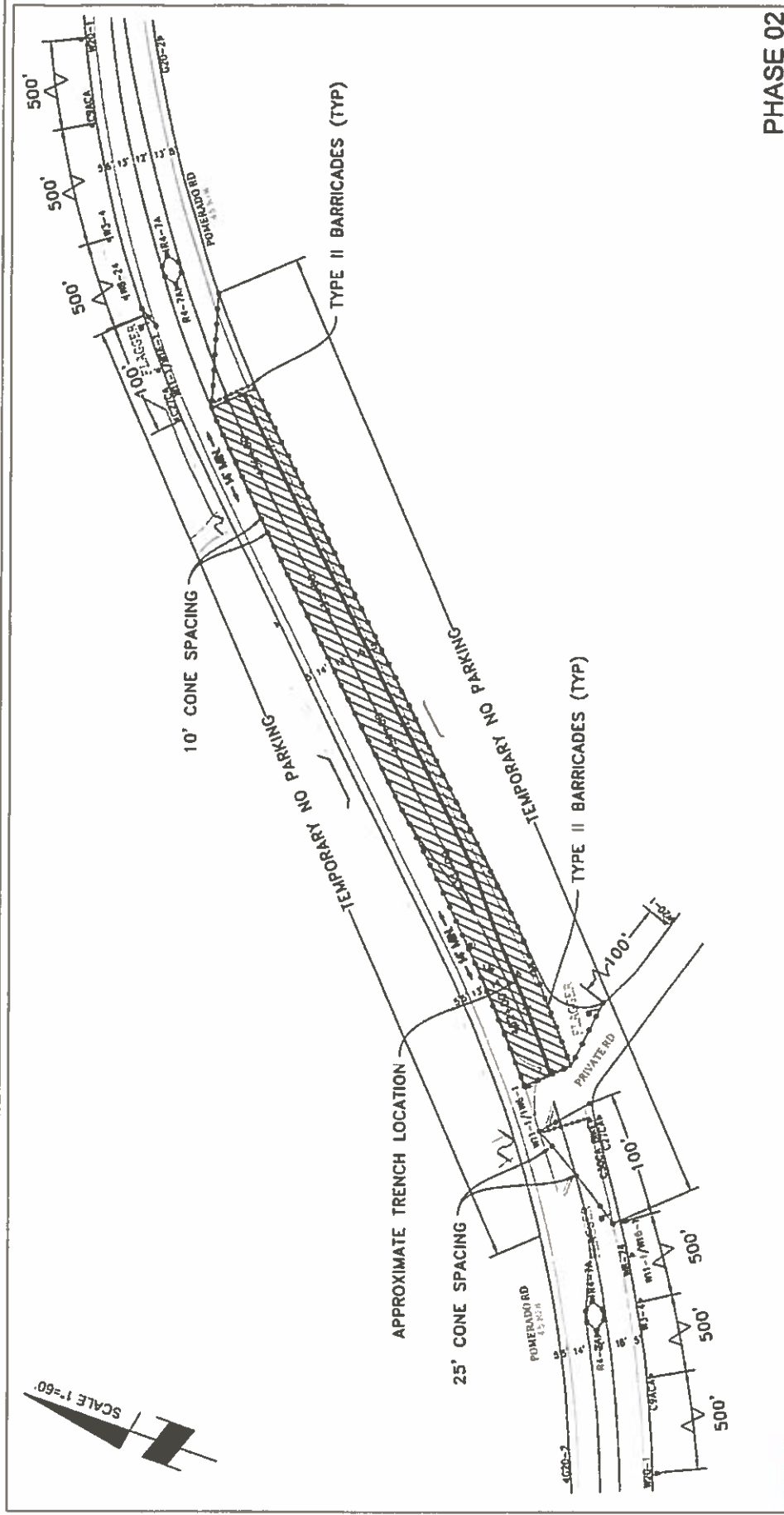
TYPE OF WORK: TRENCHING / CONDUIT

DRAWN FOR: SAN DIEGO COUNTY

MISC/POTHOLE#:

**AIRX** SURVEYORS, INC.  
 Gail McMoran  
 President

2334 EAST EL NORTE PARKWAY SUITE C  
 ESCONDIDO, CA 92027  
 PHONE (760) 480-2347  
 CELL (760) 419 3758



PHASE 02

DATE: Mar 2, 2017  
 DESIGNED BY:  
 Clint Jones

PROJECT NAME: TL23071 - Sycamore Canyon Substation To  
 Penasquitos Substation - 230 KV Underground

AIRX JOB# X160218  
 THOMAS GRID# -

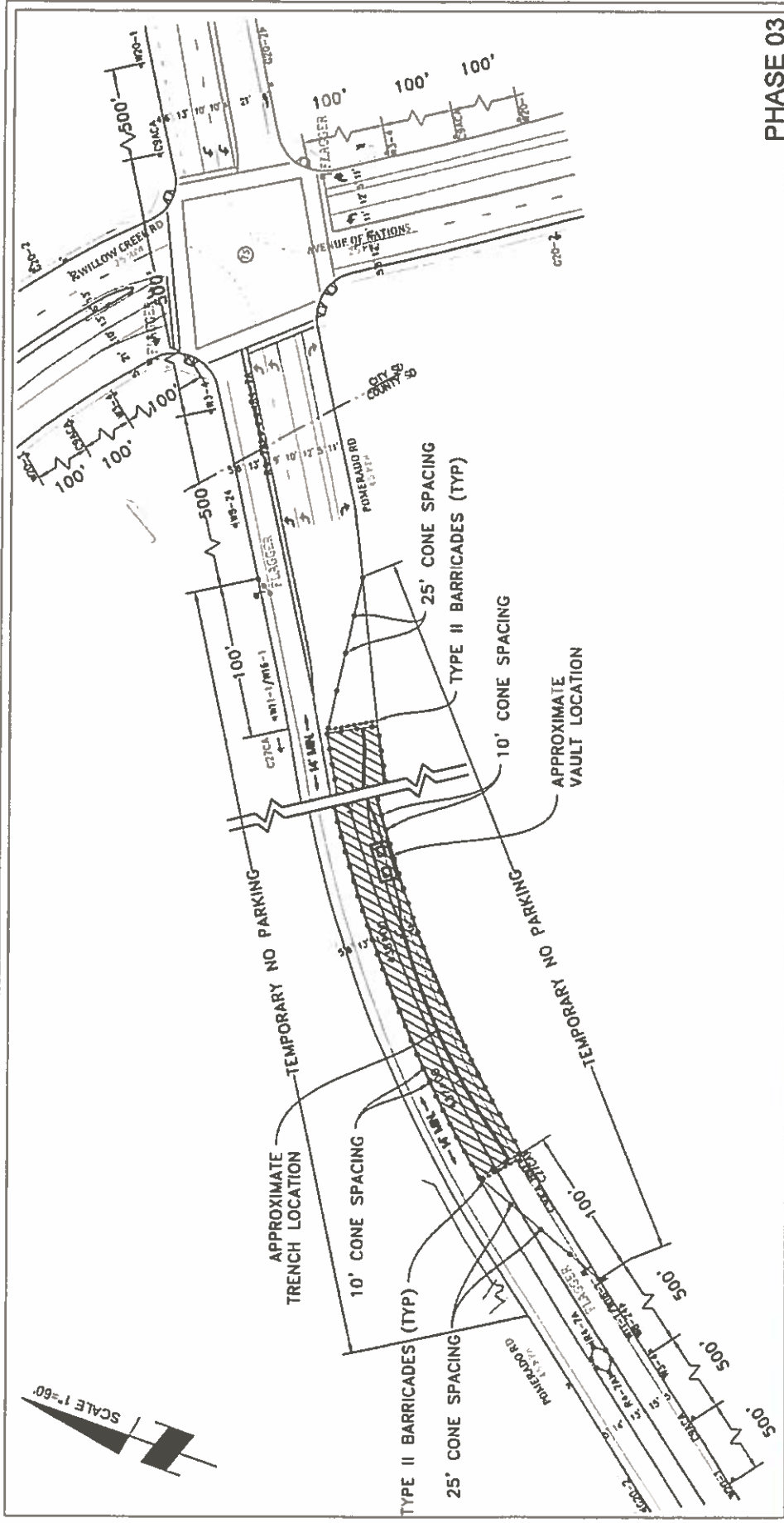
TYPE OF WORK: TRENCHING / CONDUIT  
 DRAWN FOR: SAN DIEGO COUNTY

MISC/POTHOLE#:

**AIRX** SURVEYORS, INC.  
 Gail McMoran  
 President

2544 EAST EL MORTE PARKWAY SUITE C  
 ESCONDO CA 92027  
 P-O BOX 1760 480-3347  
 CELL (800) 415-3736





PHASE 03

DATE: Mar 2, 2017  
 DESIGNED BY:  
 Clint Jones

SHEET 4 OF 4

PROJECT NAME: TL23071 - Sycamore Canyon Substation To  
 Penasquitos Substation - 230 KV Underground

AIRX JOB#: X160218

THOMAS GRID#: -

TYPE OF WORK: TRENCHING / CONDUIT

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DRAWN FOR: SAN DIEGO COUNTY

**AIRX** SURVEYORS, INC.  
 Gail McMoran  
 President

2334 EAST EL MORTE PARKWAY SUITE C  
 ESCONDIDO, CA 92027  
 PHONE: (760) 480-2347  
 CELL: (760) 419-3728

**TABLE 1**

**RECOMMENDED SIGN SPACING FOR ADVANCE WARNING SIGN SERIES AND  
MINIMUM TAPER LENGTH**

| A<br><br>APPROACH<br>SPEED (S)<br>(MPH) | B<br><br>MINIMUM DISTANCE (FEET)<br>BETWEEN SIGNS AND<br>FROM LAST SIGN TO TAPER | C<br><br>MINIMUM<br>TAPER LENGTHS (L) (FEET)<br>FOR 12-FOOT LANE |      |      |
|---|--|--|------|------|
|   |  | L  | 1/2L | 1/3L |
|   |  | 25   | 100  | 125  |
| 30                                      | 100  | 180  | 90   | 60   |
| 35                                      | 350  | 245  | 123  | 82   |
| 40                                      | 350  | 320  | 160  | 107  |
| 45                                      | 500  | 540  | 270  | 180  |
| 50                                      | 500  | 600  | 300  | 200  |
| 55+                                     | 1000   | 660  | 330  | 220  |

L FOR MERGE TAPER  
1/2L FOR SHIFT TAPER  
1/3L FOR SHOULDER TAPER

**TABLE 2**

**RECOMMENDED TAPER LENGTH AND MAXIMUM CHANNELIZER/CONE SPACING**

| A<br><br>APPROACH<br>SPEED (S)<br>(MPH) | B<br><br>BUFFER<br>LENGTH<br>(FEET) | C<br><br>MAX CONE SPACING |         |             |
|---|-------------------------------------|---------------------------|---------|-------------|
|   |                                     | TAPER                     | TANGENT | CONFLICT(*) |
| 25                                      | 155                                 | 25                        | 50      | 12          |
| 30                                      | 200                                 | 30                        | 60      | 15          |
| 35                                      | 250                                 | 35                        | 70      | 17          |
| 40                                      | 305                                 | 40                        | 80      | 20          |
| 45                                      | 360                                 | 45                        | 90      | 22          |
| 50                                      | 425                                 | 50                        | 100     | 25          |
| 55+                                     | 495                                 | 55                        | 100     | 27          |

**NOTES:**

Taper Formula

$L = S \times W$  FOR SPEEDS GREATER THAN 40 MPH

$L = \frac{W \times S^2}{60}$  FOR SPEEDS OF 40 MPH OR LESS

**WHERE:**

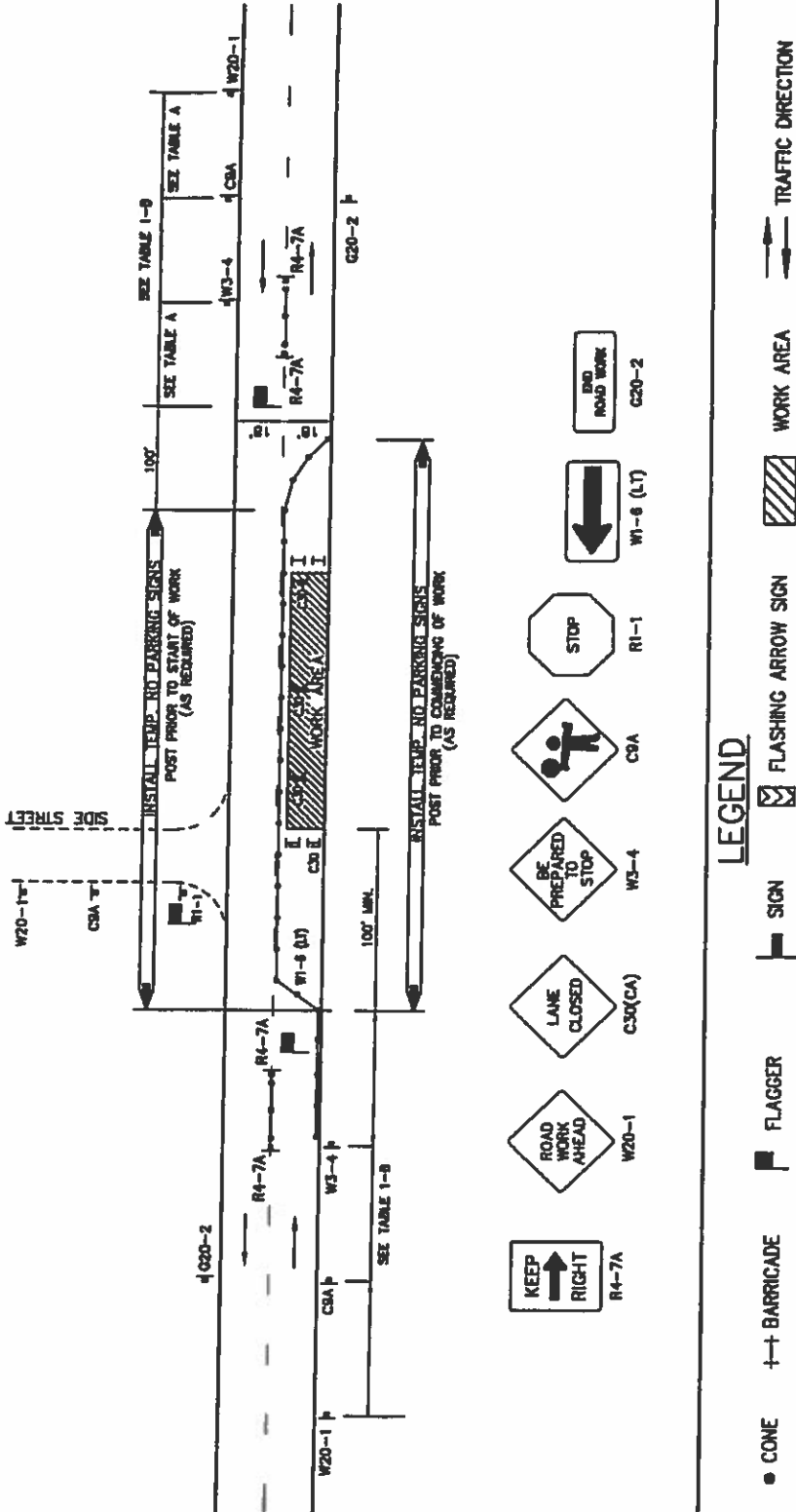
L = MINIMUM LENGTH OF TAPER (FEET)

S = APPROACH SPEED (MPH) = POSTED SPEED LIMIT OR OFF-PEAK 85TH % SPEED PRIOR TO WORK STARTING OR ANTICIPATED OPERATING SPEED

W = WIDTH OF OFFSET (FEET)

(\*) FACING OPPOSING TRAFFIC, ADJACENT TO WORK AREA OR CONFLICTING WITH EXISTING STRIPING

|          |      |           |      |   |  |               |
|----------|------|-----------|------|---|--|---------------|
| Revision | By   | Approved  | Date | SAN DIEGO REGIONAL STANDARD DRAWING   | RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE  |               |
| Revised  | BUSS |           | 2/11 |   |  |               |
| Reviewed | DG   | T.Stanton | 9/15 | <b>DEVICE SPACING TABLES</b><br>SIGN SPACING TABLE<br>TAPER LENGTH AND CONE SPACING TABLE |  12/17/15<br>Chairperson R.C.E. 19246 |               |
|          |      |           |      |   | DRAWING NUMBER   | <b>TCP-04</b> |
|          |      |           |      |   |  |               |



**LEGEND**

- CONE
- ++ BARRICADE
- FLAGGER
- SIGN
- FLASHING ARROW SIGN
- WORK AREA
- TRAFFIC DIRECTION

| POSTED SPEED LIMIT | APPROACH SPEED | TAPER LENGTH | SPACING OF CONES | SIGN SPACING |
|--------------------|----------------|--------------|------------------|--------------|
|                    |                |              |                  |              |

**GENERAL NOTES**  
 FOR HOURS OF DARKNESS, CHANGE CONES TO REFLECTOR BARRICADES WITH STEADY BURN LIGHTS. THIS PLAN MAY NOT APPLY TO SCHEDULED OR MULTI-WAY STOP INTERSECTIONS. CONSULT THE LOCAL JURISDICTION NEAR THE WORK AREA FOR TRAFFIC CONTROL PLANS NEAR THESE INTERSECTIONS. THIS PLAN MAY NOT APPLY WHEN THE WORK AREAS AFFECT BIKE LANES, SIDEWALKS, PEDESTRIAN ACCESS, AND CURVED OR NARROW ROADWAYS. CONSULT THE APPROVING AGENCY WHEN PREPARING THE TRAFFIC CONTROL PLANS OR THESE AREAS.  
 NOTHING CONTAINED ON THIS DRAWING SHALL PREVENT LOCAL JURISDICTIONS FROM MODIFYING CHANGING OR ADOPTING NEW SPECIFICATIONS DEEMED NECESSARY. CREDIT FOR POSITION, LOCATION AND USE OF TRAFFIC CONTROL DEVICES IS SOLELY FOR THE PURPOSE OF CREDITANCE TO ASSIST IN THE SET UP OF THE TRAFFIC CONTROL PLANS.  
 TOP IS REQUIRED FOR ALL TRAFFIC CONTROL PLANS.

AGENCY USE

APPLICANT USE

AGENCY ENGINEER'S COMMENTS

SUBMITTED BY:

NAME \_\_\_\_\_

COMPANY \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE \_\_\_\_\_

RECOMMENDED BY THE SAN DIEGO REGIONAL STANDARDS COMMITTEE

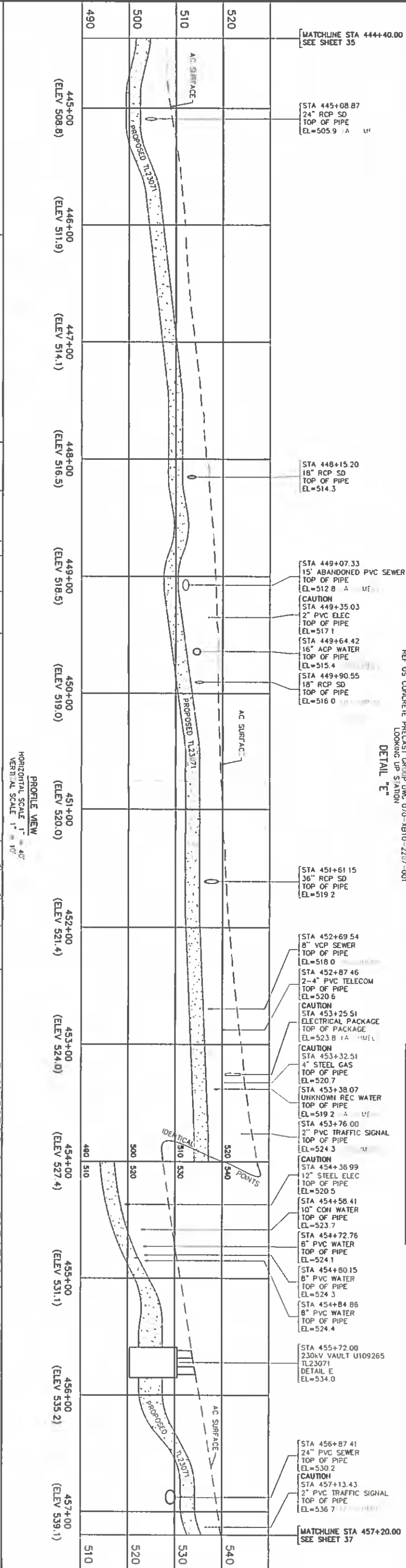
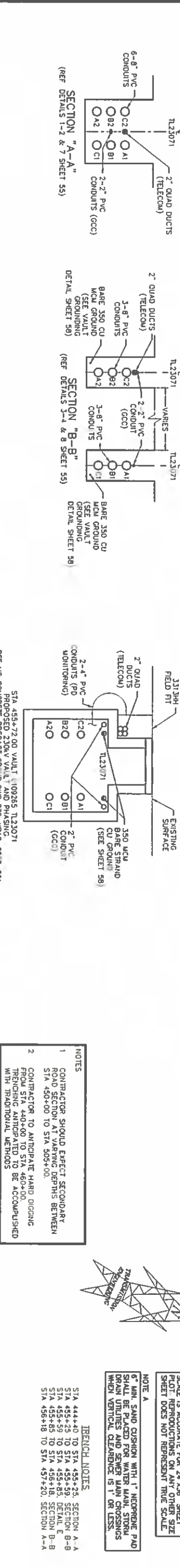
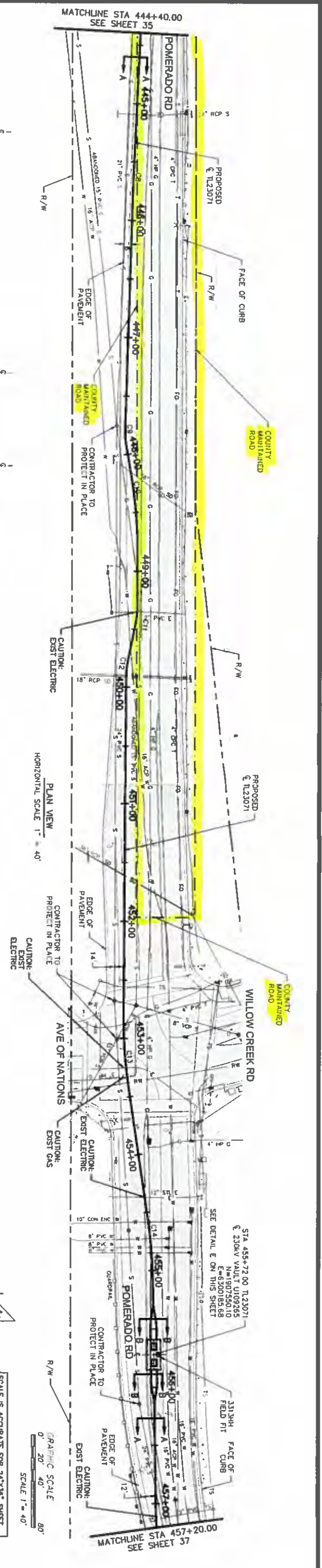
*T. Stanton* 12/17/15  
 Chairperson R.C.E. 19246

DRAWING NUMBER **TCP-09**

**SAN DIEGO REGIONAL STANDARD DRAWING**

**SIDE OF ROAD WORK AREA  
 TWO LANE TRAFFIC CONTROL WITH FLAGGERS**

| Revision | By   | Approved   | Date |
|----------|------|------------|------|
| Revised  | BUSS |            | 2/11 |
| Reviewed | DG   | T. Stanton | 9/15 |
|          |      |            |      |
|          |      |            |      |



**SDGE** SAN DIEGO GAS & ELECTRIC  
TRANSMISSION ENGINEERING

PLAN & PROFILE  
TL23071

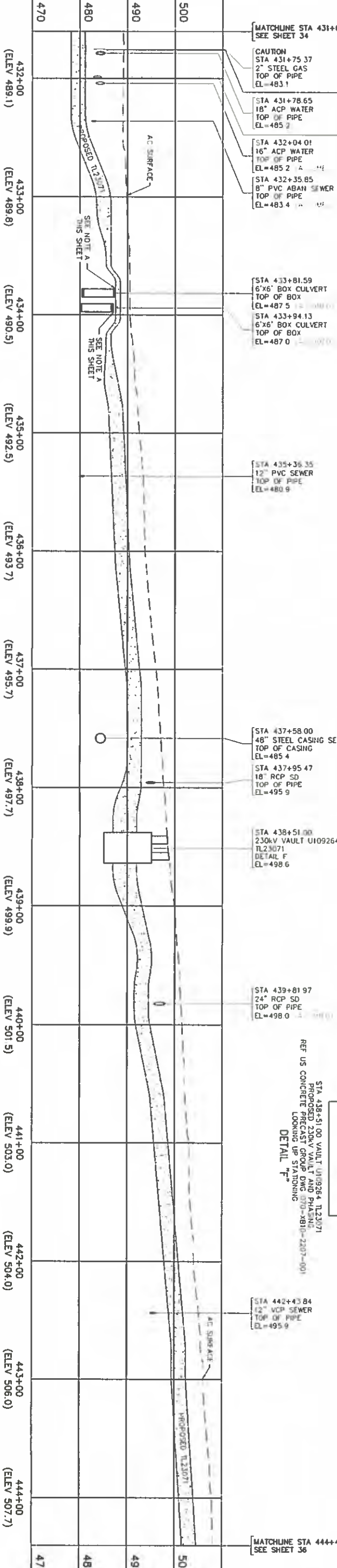
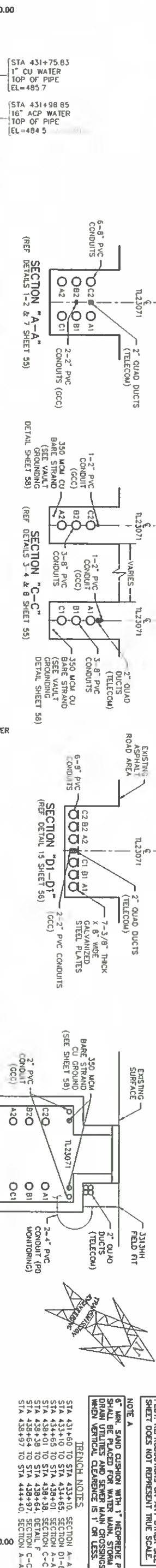
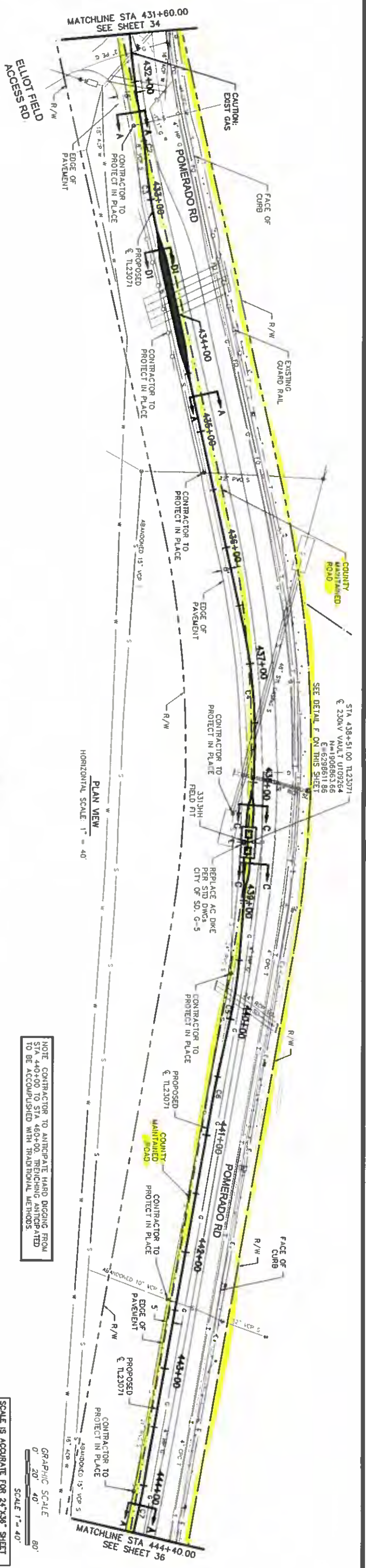
DRAWING NUMBER  
63422-36

**NVIS**

Call 2 Working Days  
Before You Dig!  
**811**

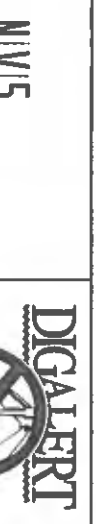
**DIG ALERT**

|                          |               |           |          |   |
|--------------------------|---------------|-----------|----------|---|
| DRAWN BY:                | MNS           | DATE:     | 3/6/2017 | CITY OF SAN DIEGO, PWS NO. 45880 APPROVAL NO. 0827258 |
| THD. DESG.               | 1208, ET      | NO. DESG. | 1310, E2 |   |
| CONST. NO.               | 250873        |           |          |   |
| PLAN & PROFILE           | SCALE: 1"=40' |           |          |   |
| HORIZONTAL:              | 1"=40'        |           |          |   |
| VERTICAL:                | 1"=10'        |           |          |   |
| SCALE: H:1"=40' V:1"=10' |               | SHEET     | 36 OF 60 |   |



PROFILE VIEW  
 HORIZONTAL SCALE 1" = 40'  
 VERTICAL SCALE 1" = 10'

CITY OF SAN DIEGO, PWS NO. 043500 APPROVAL NO. 1837398



**NIVIS**  
 SAN DIEGO GAS & ELECTRIC  
 TRANSMISSION ENGINEERING

| DATE     | BY  | CHKD. | APP. | DATE | BY | CHKD. | APP. |
|----------|-----|-------|------|------|----|-------|------|
| 3/8/2017 | NIS |       |      |      |    |       |      |

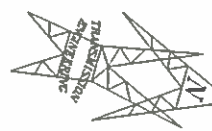
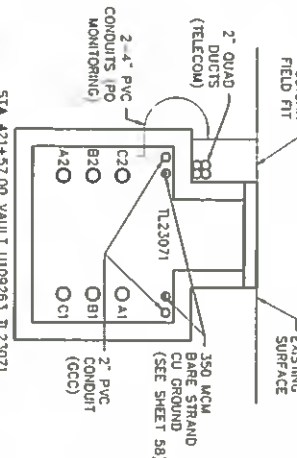
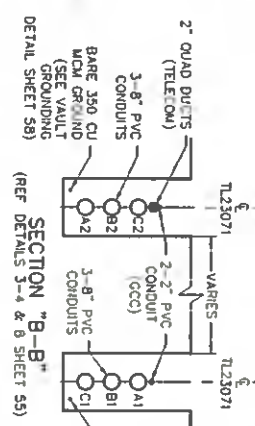
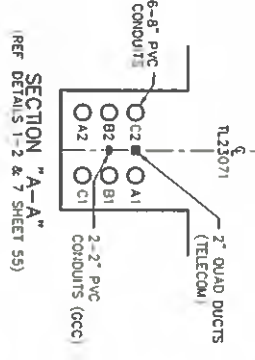
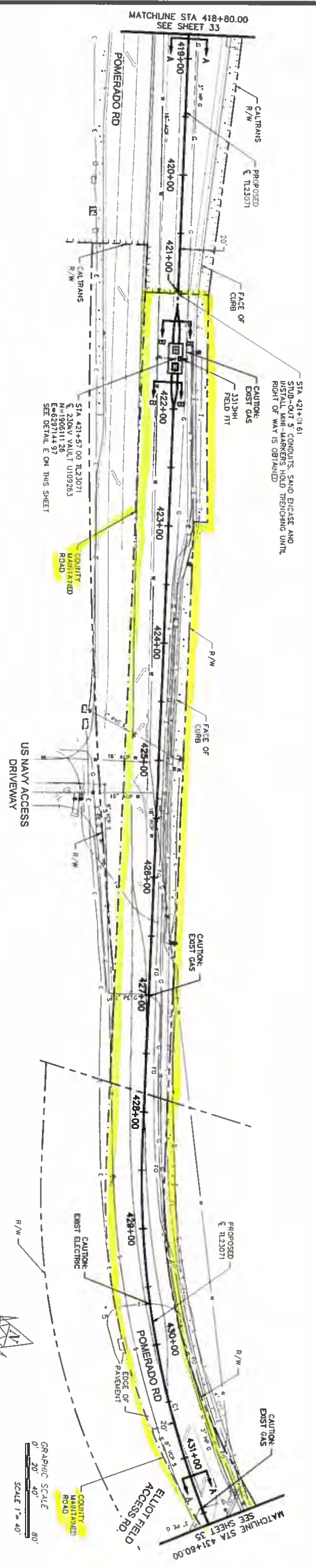
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|-------------|---------|----|--|
| THO. DESIG. | 1/29/17 | CT |  |
| PROJ. NO.   | TL23071 |    |  |
| CONST. NO.  | 2830875 |    |  |

|                      |   |
|----------------------|---|
| PLAN & PROFILE       | A |
| HORIZONTAL: 1" = 40' |   |
| VERTICAL: 1" = 10'   |   |

|                          |                |
|--------------------------|----------------|
| SCALE: H:1"=40' V:1"=10' | SHEET 35 OF 60 |
|--------------------------|----------------|

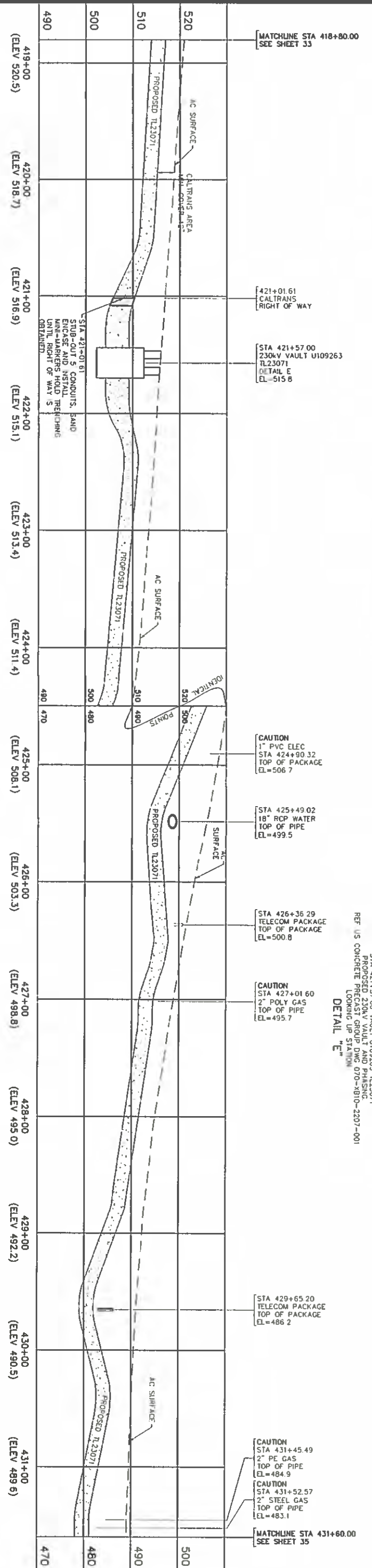
**SDGE**  
 SAN DIEGO GAS & ELECTRIC  
 TRANSMISSION ENGINEERING  
 PLAN & PROFILE  
 TL23071

SYCAMORE CANYON SUBSTATION  
 TO PENASQUITOS SUBSTATION  
 230KV UNDERGROUND SEGMENT  
 DRAWING NUMBER  
 63422-35



NOTE A  
SCALE IS ACCURATE FOR 24\"/>

IRRECH NOTES  
STA 418+80 TO STA 421+10, SECTION A-A  
STA 421+10 TO STA 421+44, SECTION B-B  
STA 421+44 TO STA 421+70, DETAIL E  
STA 421+70 TO STA 422+04, SECTION B-B  
STA 422+04 TO STA 431+60, SECTION A-A



PROFILE VIEW  
HORIZONTAL SCALE 1" = 40'  
VERTICAL SCALE 1" = 10'

**NV5**

**DIGALERT**  
Call 2 Working Days Before You Dig! 811

|                          |          |
|--------------------------|----------|
| DATE                     | 3/8/2017 |
| THG BRGS                 | 1586 CT  |
| PROJ NO                  | 1310 CT  |
| CONST NO                 | 2880975  |
| PLAN & PROFILE           | A        |
| HORIZONTAL: 1" = 40'     | 13128    |
| VERTICAL: 1" = 10'       | 2880975  |
| SCALE: H=1"=40' V=1"=10' | DATE     |

**SDGE** SAN DIEGO GAS & ELECTRIC TRANSMISSION ENGINEERING  
PLAN & PROFILE TL23071  
SHEET 34 OF 60

SYCAMORE CANYON SUBSTATION TO PENASQUITOS SUBSTATION 230KV UNDERGROUND SEGMENT  
DRAWING NUMBER 63422-34

DRAWN BY: NV5  
DATE: 3/8/2017  
THG BRGS: 1586 CT  
PROJ NO: 1310 CT  
CONST NO: 2880975  
SCALE: H=1"=40' V=1"=10'

CITY OF SAN DIEGO, PWS NO. 288888 APPROVAL NO. 1837888

**SIGN LEGEND**

|  |         |  |       |  |          |  |          |  |         |  |            |  |       |  |       |  |        |  |        |  |        |  |              |  |       |  |       |  |         |
|--|---------|--|-------|--|----------|--|----------|--|---------|--|------------|--|-------|--|-------|--|--------|--|--------|--|--------|--|--------------|--|-------|--|-------|--|---------|
|  | G9A     |  | C12   |  | C20(CAL) |  | C20(CAR) |  | C30(CA) |  | C30 (BIKE) |  | G20-2 |  | M4-8A |  | M4-10L |  | M4-10R |  | R1-1   |  | R3-1         |  | R3-2  |  | R3-4  |  | R3-5L   |
|  | R3-5R   |  | R3-6L |  | R3-6R    |  | R3-7L    |  | R3-7R   |  | R4-7A      |  | R4-8A |  | R9-3  |  | R9-9   |  | R9-10  |  | R9-11  |  | R9-11a       |  | R11-2 |  | R11-4 |  | SC3(CA) |
|  | W1-4L   |  | W1-4R |  | W3-4     |  | W8-24    |  | W16-1   |  | W20-1      |  | W20-2 |  | W20-3 |  | W20-4  |  | W20-5L |  | W20-5R |  | W20-5 (BIKE) |  |       |  |       |  |         |
|  | R3-6MOD |  |       |  |          |  |          |  |         |  |            |  |       |  |       |  |        |  |        |  |        |  |              |  |       |  |       |  |         |

MINIMUM DISTANCE (FEET) BETWEEN SIGNS AND FROM LAST SIGN TO TAPER

| APPROACH SPEED (MPH) | MINIMUM DISTANCE (FEET) |
|----------------------|-------------------------|
| 25                   | 100                     |
| 30                   | 250                     |
| 35                   | 250                     |
| 40                   | 250                     |
| 45                   | 350                     |
| 50                   | 350                     |
| 55+                  | 350                     |

MINIMUM TAPER LENGTHS (L) (FEET) FOR 12-FOOT LANE

| L   | 1/2L | 1/3L | BUFFER LENGTH (FEET) |
|-----|------|------|----------------------|
| 125 | 65   | 45   | 155                  |
| 180 | 90   | 60   | 200                  |
| 245 | 125  | 85   | 250                  |
| 320 | 160  | 110  | 305                  |
| 540 | 270  | 180  | 360                  |
| 600 | 300  | 200  | 425                  |
| 660 | 330  | 220  | 495                  |

MAX CONE SPACING

| TAPER | TANGENT | CONFLICT |
|-------|---------|----------|
| 25    | 50      | 12       |
| 30    | 60      | 15       |
| 35    | 70      | 17       |
| 40    | 80      | 20       |
| 45    | 90      | 22       |
| 50    | 100     | 25       |
| 55    | 110     | 27       |

**LEGEND**

- APPROXIMATE POTHOLE LOCATION
- SIGN
- TRAFFIC CONES / DELINEATOR
- BARRICADE
- FLAGGER
- FLASHING ARROW SIGN
- WORK ZONE
- CONSTRUCTION VEHICLE
- BUS STOP

UTILITY SURVEYORS, INC.



Gail McMorran  
President

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**AIRX JOB#:** X160218

**THOMAS GRID#:** –

**TYPE OF WORK:** TRENCHING / CONDUIT

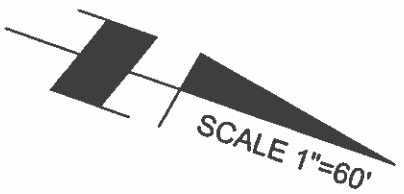
**DRAWN FOR:** SAN DIEGO COUNTY

**MISC./POTHOLE#:**

DATE: Mar 2, 2017

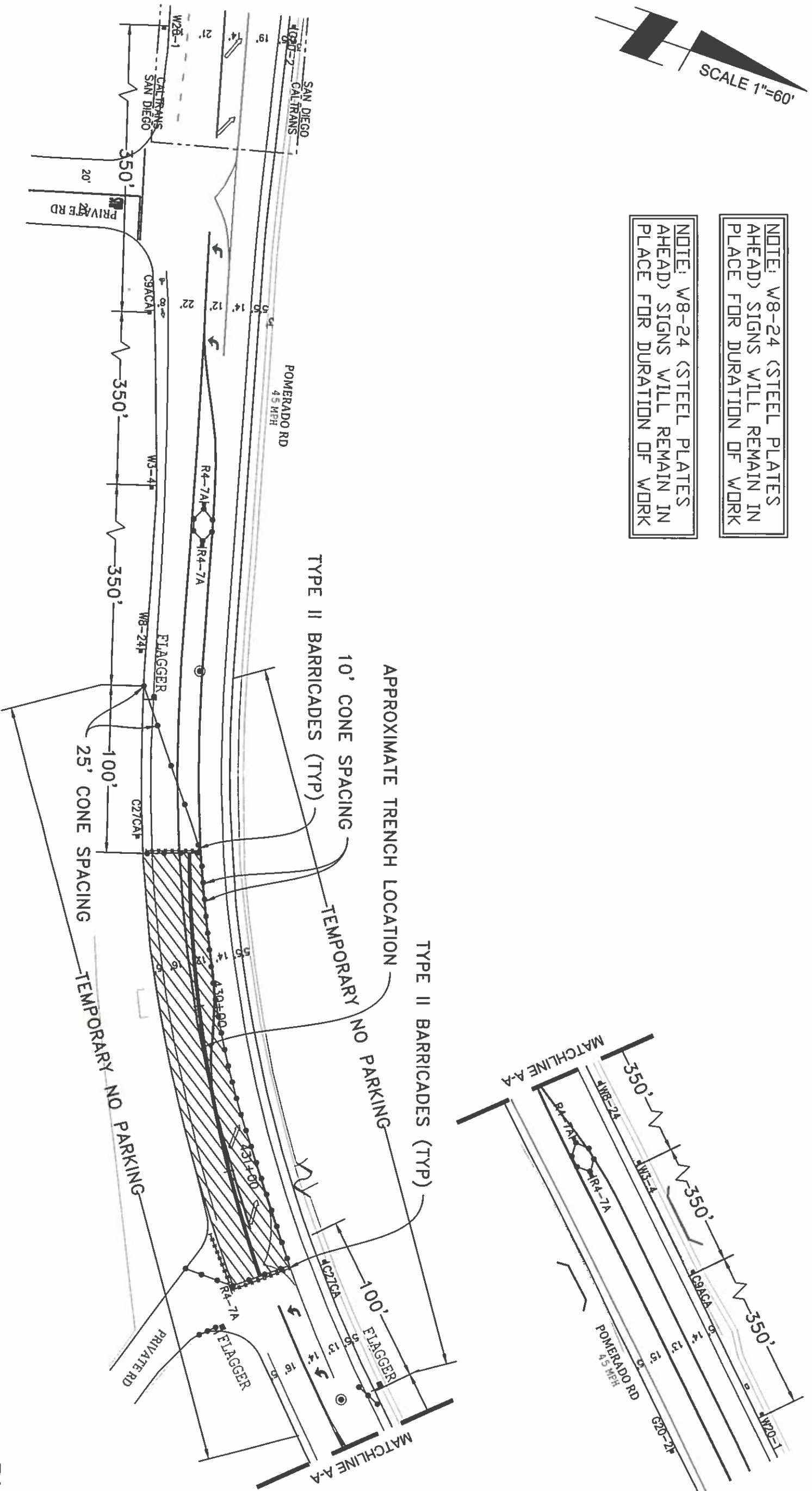
DESIGNED BY:  
Clint Jones

SHEET 1 OF 4



NOTE: W8-24 (STEEL PLATES AHEAD) SIGNS WILL REMAIN IN PLACE FOR DURATION OF WORK

NOTE: W8-24 (STEEL PLATES AHEAD) SIGNS WILL REMAIN IN PLACE FOR DURATION OF WORK



PHASE 01

UTILITY SURVEYORS, INC.



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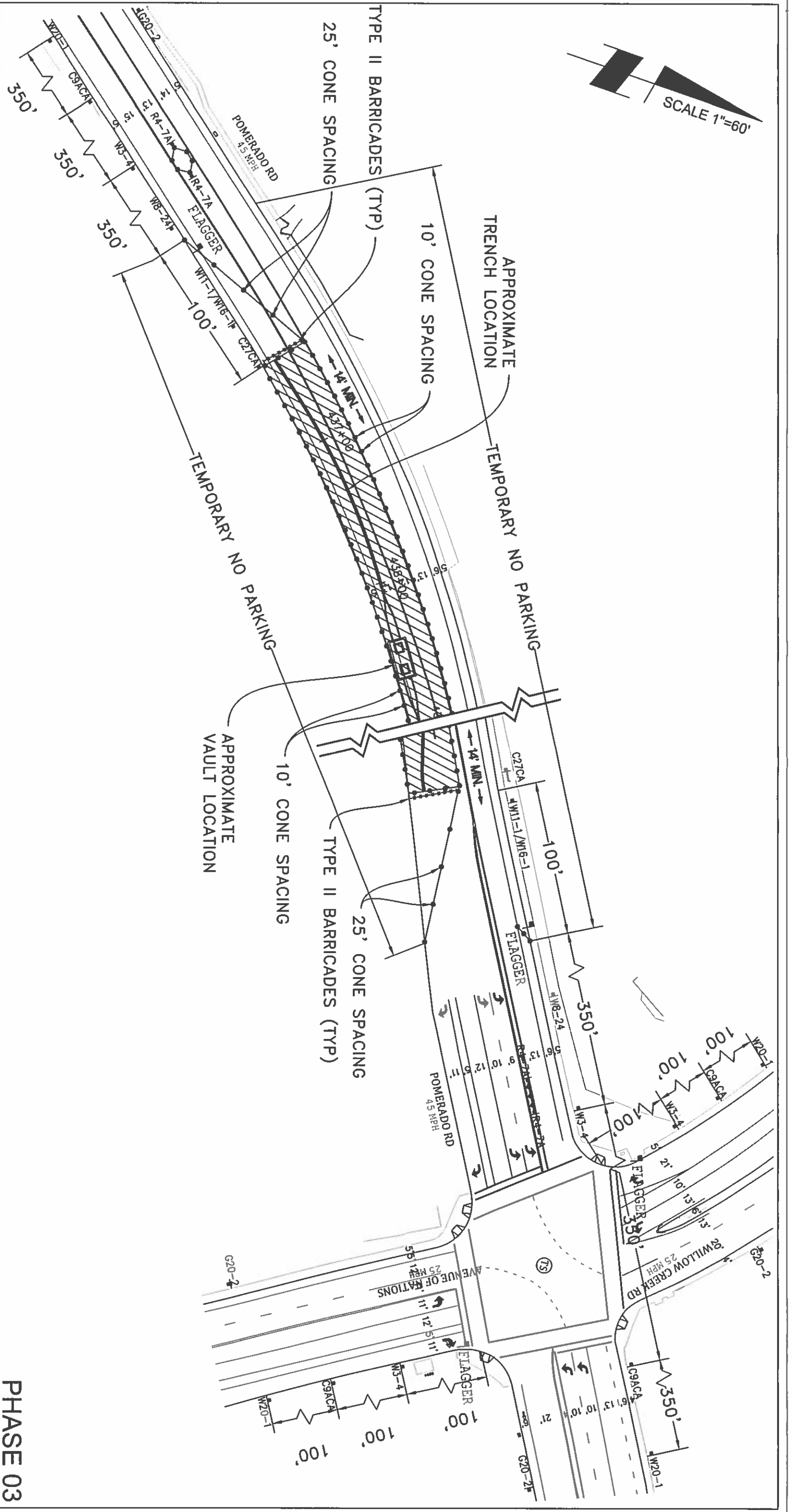
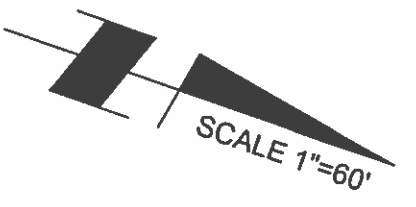
DESIGNED BY:

Clint Jones

SHEET 2 OF 4







PHASE 03

UTILITY SURVEYORS, INC.  
**AIRX**  
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 President

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 CELL: (760) 419-3738

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|--|------------------------------------|
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| <b>AIRX JOB#:</b> X160218  | <b>THOMAS GRID#:</b> –             |
| <b>TYPE OF WORK:</b> TRENCHING / CONDUIT   | <b>DRAWN FOR:</b> SAN DIEGO COUNTY |
| <b>MISC/POTHOLE#:</b>  |                                    |

|                                 |
|---------------------------------|
| <b>DATE:</b> Mar 2, 2017        |
| <b>DESIGNED BY:</b> Clint Jones |
| <b>SHEET</b> 4 <b>OF</b> 4      |